



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------|------------------------|
| 10/532,173 | 03/27/2006 | Manfred Herbst | 2002p17478WOUS | 6185 |
| 7590 Siemens Corporation Intellectual Property Department 170 Wood Avenue South Iselin, NJ 08830 | | | EXAMINER WHITE, DWAYNE J | |
| | | | ART UNIT 3745 | PAPER NUMBER |
| | | | MAIL DATE 06/09/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/532,173

Applicant(s)

HERBST, MANFRED

Examiner

DWAYNE J. WHITE

Art Unit

3745

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11, 12 and 15-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 12 and 15-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's amendment filed 14 February 2008 has been fully considered. Claims 11, 12, 15-24 are pending. Applicant has amended claim 11 to recite the limitation of "a plurality of recesses each having the shape of a hemisphere or each having a shape of a half tear-drop, each recess positioned the same distance from all adjacent recesses." Applicant then argues that prior art reference Hickey only alludes to other prior art as "placing uniformly shaped, sized and spaced surface deviations over the entire surface of an object that contacts the fluid medium" indicting column 1, lines 25-29. Applicant then states that Hickey teaches away from uniformly spaced surface deviations as confirmed by Figures 1-7. The Examiner respectfully disagrees with Applicant's assertions. The Examiner points out that Hickey's statements in the column 1, lines 25-29 show that having uniform deviation is also well known in the art. Also the Examiner points to Column 1, lines 54-56, which state that the deviation can be equal in size or may vary. The Examiner maintains the position that even with spiral pattern the distance between the adjacent recesses is uniform and disagrees that Hickey teaches away from uniformed spacing. In regards to Applicant's arguments with reference to prior art Olsen. The Examiner notes that Figure 4 clearly shows tear-drop shaped recesses and that on page 1 the invention of Olsen is stated to also apply to air drag on a surface (lines 1-7). In regards to claim 12 the Examiner points out that the since disclosed invention of Hickey is stated as being applied to "one surface of an object in contact with the fluid medium" (Column 1, lines 36-38) and the mast, gondola and the rotor all have surfaces in contact with the fluid medium it would have been obvious to apply the recesses to any surface of the wind turbine for the purpose of controlling the fluid flow

over the surface. The rejections made in the previous Office Action have been maintained though modified to reflect Applicant's amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 12, 15-17 and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hickey (4,974,633) in view of Olsen (WO 02/064422A1). Hickey discloses a wind power unit comprising: a mast; a nacelle; a rotor associated with the nacelle; and a plurality of rotor blades 22/26 having a plurality of recesses to improve flow arranged on the rotor blades approximately in the region between the transition point between laminar and turbulent flow and the final edge of the rotor blade and the shape and configuration of the recesses are designed such that as the air sweeps past the recess, an eddy forms in the recess that assists the passage of the air and accelerates the air volume. Hickey discloses hemispherical recesses that are arranged in a pattern and are the same distance from each adjacent recess as can be seen in example pattern 67. In regards to claims 19 and 20, it is clearly an obvious matter of engineering design to tailor the structure and control software for the wind turbine unit to a stall speed as modified by the recesses since the modifications would change the operation of the wind turbine unit. Hickey does not disclose having recesses on the mast, gondola or rotor, the recesses being

arranged in offset rows, a component surface not being susceptible to dirt and ice or the recesses being on a support material.

In regards to claim 12, the Examiner points out that the since disclosed invention of Hickey is stated as being applied to "one surface of an object in contact with the fluid medium" (Column 1, lines 36-38) and the mast, gondola and the rotor all have surfaces in contact with the fluid medium it would have been obvious to apply the recesses to any surface of the wind turbine for the purpose of controlling the fluid flow over the surface.

Olsen teaches a plurality of offset rows of teardrop shaped recesses (Page 7, lines 13-15; Figure 4) that are applied to a surface of a component interacting with a fluid medium. The recesses reduce drag similar to how Hickey's recesses reduce drag and also reduce susceptibility of the component to dirt and ice (Page 5, lines 6-9). The recesses are configured on a flat support material that is fixed to the component (Page 6, lines 30 to Page 7, line 6). Since both Hickey and Olsen disclose drag reducing recesses to be applied to aerodynamic surfaces, and it is already well known in the art that such applications are interchangeable based on the needs of the application, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the recess of Hickey, with the teaches of Olsen as stated above, for the purpose of reducing drag forces on the wind turbine unit.

In regards to new claims 22 and 24, the Examiner holds that position that since the recesses of Hickey, as modified, are capable of performing the function of forming an eddy in the recess that assists the passage of air and accelerates the air volume and reducing turbulence, the function language of both claims is inherently met by the structure disclosed in the prior art.

The Examiner points out that the terms "configured" or "configuration" does not impart any additional structural limitation to the claims above what is explicitly stated in the claim language.

Claims 11, 17 and 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hickey in view of Wobben (6,729,846). Hickey discloses Hickey discloses a wind power unit comprising: a mast; a nacelle; a rotor associated with the nacelle; and a plurality of rotor blades 22/26 having a plurality of recesses to improve flow arranged on the rotor blades approximately in the region between the transition point between laminar and turbulent flow and the final edge of the rotor blade and the shape and configuration of the recesses are designed such that as the air sweeps past the recess, an eddy forms in the recess that assists the passage of the air and accelerates the air volume Hickey does not disclose except for the recesses being on a flat film material fixed on or to the wind power unit.

Wobben teaches a wind power unit wherein recesses are configured on a film support material that is fixed to the wind turbine component (Column, 3, lines 56-65). Since both Hickey and Wobben disclose recesses to be applied to aerodynamic surfaces, and it is already well known in the art that such applications are interchangeable based on the needs of the application, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the recess of Hickey, with the teaches of Wobben as stated above, by using a film support material for the purpose of applying surface modifications to an aerodynamic surface.

CONCLUSION

Contact Information

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DWAYNE J. WHITE whose telephone number is (571)272-4825. The examiner can normally be reached on 7:00 am to 3:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dwayne J White/
Examiner, Art Unit 3745

DJW

/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745